

Oracle Financial Services

Cash Flow Processes



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Get Help

Topics:

- [Get Help in the Applications](#)
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1.1 Get Help in the Applications

Use Help icons to access help in the application.

Note that not all pages have Help icons. You can also access the [Oracle Help Center](#) to find guides and videos.

Additional Resources

- Community: Use [Oracle Cloud Customer Connect](#) to get information from experts at Oracle, the Partner Community, and other users.
- Training: Take courses on Oracle Cloud from [Oracle University](#).

1.2 Learn About Accessibility

For information about Oracle's commitment to accessibility, visit the [Oracle Accessibility Program](#). Videos included in this guide are provided as a media alternative for text-based topics also available in this guide.

1.3 Get Support

You can get support at [My Oracle Support](#).

For accessible support, visit Oracle Accessibility Learning and Support.

1.4 Get Training

Increase your knowledge of Oracle Cloud by taking courses at [Oracle University](#).

1.5 Join Our Community

Use [Cloud Customer Connect](#) to get information from industry experts at Oracle and in the Partner Community. You can join forums to connect with other customers, post questions, and watch events.

1.6 Share Your Feedback

We welcome your feedback about Oracle Applications User Assistance. If you need clarification, find an error, or just want to tell us what you found helpful, we did like to hear from you.

You can email your feedback to [My Oracle Support](#).

Thanks for helping us improve our User Assistance!

1.7 Before You Begin

Refer to following Documents:

- [See What's New](#)

2

Create Cash Flow Process

This module discusses the procedure for creating and executing the Cash Flow Process. When all the required assumptions are defined, CFE Processing performs the calculation and generates a result set. The Cash Flow Process allows you to perform the following tasks:

- Determine the data that you want to process.
- Submit to the CFE processing engine the modelling horizon for which you want to calculate cash flows.
- Specify the prepayment , forecast rate, and other assumptions to be used in the process.
- Define the output preferences.
- Execute the Cash Flow process and generate results.

Topics:

- [Cash Flow Process Summary Page](#)
- [Search Cash Flow Process](#)
- [Create Cash Flow Process](#)
- [Execute Cash Flow Process](#)
- [View Cash Flow Process log](#)

2.1 Cash Flow Process Summary Page

This page is the gateway to all Cash Flow Processes and related functionality. You can navigate to other pages relating to Cash Flow Process from this point.

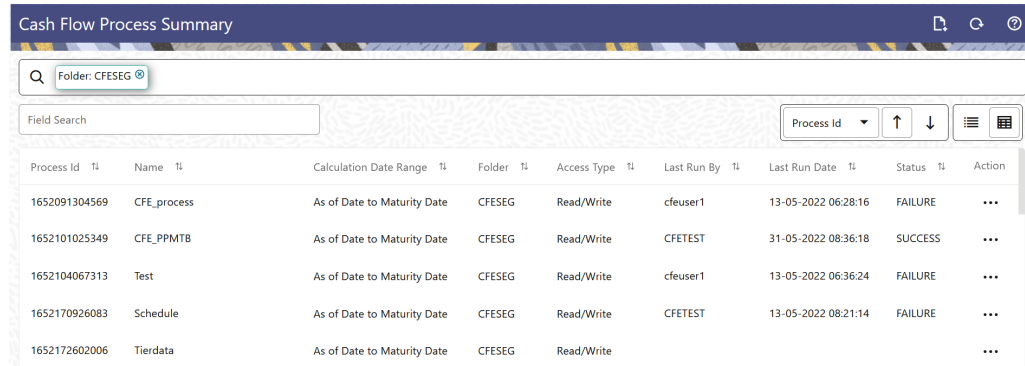
The **Cash Flow Process Summary** page displays the following columns:

Table 2-1 Cash Flow Process – Fields and Descriptions

Column	Description
Process ID	Displays the Process ID of Cash Flow Process .
Name	Displays the Cash Flow Process's short name.
Calculation Date Range	Displays the calculation date range for which process is defined.
Folder	Displays the Folder name where the Cash Flow Process is saved.
Access Type	Displays the access type of Cash Flow Process. It can be Read-Only or Read/Write.
Last Run By	Displays the Name of the user who last runs the Cash Flow Process .
Last Run Date	Displays the Date and Time when Cash Flow Process was run last.
Status	Displays the status of the Cash Flow Process.

Table 2-1 (Cont.) Cash Flow Process – Fields and Descriptions

Column	Description
Action	Displays the list of actions that can be performed on the Cash Flow Process . For more information, see Cash Flow Process – Icons and Descriptions .

Figure 2-1 Cash Flow Process Summary Page

The screenshot shows the 'Cash Flow Process Summary' page. At the top, there is a search bar with 'Folder: CFSEEG' and a 'Field Search' input. Below this is a table with columns: Process Id, Name, Calculation Date Range, Folder, Access Type, Last Run By, Last Run Date, Status, and Action. The table contains five rows of data.

Process Id	Name	Calculation Date Range	Folder	Access Type	Last Run By	Last Run Date	Status	Action
1652091304569	CFE_process	As of Date to Maturity Date	CFSEEG	Read/Write	cfeuser1	13-05-2022 06:28:16	FAILURE	...
1652101025349	CFE_PPMTB	As of Date to Maturity Date	CFSEEG	Read/Write	CFETEST	31-05-2022 08:36:18	SUCCESS	...
1652104067313	Test	As of Date to Maturity Date	CFSEEG	Read/Write	cfeuser1	13-05-2022 06:36:24	FAILURE	...
1652170926083	Schedule	As of Date to Maturity Date	CFSEEG	Read/Write	CFETEST	13-05-2022 08:21:14	FAILURE	...
1652172602006	Tierdata	As of Date to Maturity Date	CFSEEG	Read/Write				...

The Action column on the Cash Flow Process Summary page offers several actions that allow you to perform different functions. The following actions are available for the Cash Flow Process .

Table 2-2 Cash Flow Process – Icons and Descriptions

Column	Description
Add	Click Add icon to build a new Cash Flow Process .
Refresh	Click Refresh icon to refresh the Summary Page.
Help	Click Help icon to view the Cash Flow Process help.
View/Edit	Click on the Action icon against the Cash Flow Process Name and select View/Edit to view or edit the contents of a Cash Flow Process in read/write format.
Save As	Click on the Action icon against the Cash Flow Process Name and select Save As to create a copy of an existing Cash Flow Process .
Delete	Click on the Action icon against the Cash Flow Process Name and select Delete to delete an existing Cash Flow Process .

Table 2-2 (Cont.) Cash Flow Process – Icons and Descriptions

Column	Description
Execute	Click on the Action icon against the Cash Flow Process Name and select Execute to execute an existing Cash Flow Process . After clicking Execute, the Run Parameter Execution window is displayed. Select As of Date (Execution Date) and Legal Entity, and then click Run. For more information, see Executing Cash Flow Process section.
Execute Details	Click on the Action icon against the Cash Flow Process Name and select Execute Details to view execution details of the Cash Flow Process .

2.2 Search Cash Flow Process

Search for a Cash Flow Process to perform any of the following tasks:

- View
- Edit
- Copy (Save As)
- Delete

Prerequisites

Predefined Cash Flow Process

Procedure

To search the Cash Flow Process , follow these steps:

- Navigate to the **Cash Flow Process Summary** page.
- Enter the **Id, Name, Group, Condition Column**, or **Is User Defined** status in Search Criteria.
- Click **Search** .

Only Cash Flow Process that match the search criteria are displayed.

2.3 Create Cash Flow Process

To create a new Cash Flow process, perform the following steps:

1. Navigate to the **Cash Flow Process Summary** page.
2. Click **Add** . The Create Cash Flow Process page is displayed.
3. Enter the details in the **Process Details** section.

Figure 2-2 Process Details

Table 2-3 List of process details used for Creating Cash Flow Process

Parameter	Description
Name	Enter the name of the Cash Flow Process .
Description	Enter the description of the Cash Flow Process .
Folder	Select the Folder where the Cash Flow Process needs to be saved.
Access Type	Select the Access Type as Read-Only or Read/Write.

4. Click **Apply** to navigate to the **Source Data** section.

Figure 2-3 Source Data

5. Enter the Source Data details shown in the following table:

Table 2-4 List of Source Data details used for Creating Cash Flow Process

Parameter	Description
Data Source	This field allows you to select the Instrument tables that must be included in a Cash Flow process.
Data Filter Folder	Select the Folder from which you want to apply Data Filter.

Table 2-4 (Cont.) List of Source Data details used for Creating Cash Flow Process

Parameter	Description
Data Filter	This field allows you to select a subset of data for processing by selecting a filter that was previously created.

- Click **Apply** to navigate to the **Calculation Elements** section.

Figure 2-4 Calculation Elements

As Of Date (09-Oct-2015) Cash Flow Process Cancel Apply ?

Process Details ✓ Source Data ✓ **Calculation Elements** i Product Characteristics 4 Output Preferences 5 Freeze Process 6

Please select what you want to calculate and behaviour to apply.
Choose Calculate Date Range, Prepayment, Market Valuation, and other options.

Calculation Date Range

Calculation Date Range Required Tenor Multiplier

Prepayment

Folder: CFSEEG Prepayment Rule ...

Forecast Rate

Folder: CFSEEG Forecast Rates ...

Market Valuation

☐ Market Value ☐ Duration ☐ YTM, Modified Duration, DV01, Convexity ☐ EIR

Folder: CFSEEG Discount Method ...

Holiday Calendar

☐ Enable

Amortization of Premiums and Discounts

Amortization of Premiums and Discounts: Do not Calculate Selected Dates

- Enter the Calculation Elements shown in the following table:

Table 2-5 List of Calculation Elements details used for Creating Cash Flow Process

Parameter	Description
Calculation Date Range	<p>Select the time horizon for which you want to perform the cash flow calculation. This has the following options:</p> <ul style="list-style-type: none"> • As of Date to Maturity Date: Calculation is performed between As of Date and Maturity Date of the instrument. • As of Date to Next Reprice Date: Calculation is performed between As of Date and Next Repricing Date of the instrument. • Origination Date to Maturity Date: Calculation is performed between Origination Date to Maturity Date of the instrument. • Last Reprice Date to Next Reprice Date: Calculation is performed between Last Reprice Date to Next Reprice Date of the instrument. • As of Date to Future Specified Date: Calculation is performed for the specified tenor starting from As of Date.
Prepayment	<p>Select the Folder and Prepayment you want to be applied during cash flow calculation. See Prepayment, to set up prepayment methods. This is an optional step.</p>
Forecast Rate Scenario	<p>Select the Folder and Forecast Rates you want to be applied to the process. See Forecast Rate Scenarios to set up rate scenarios. This is an optional step and enabled only when the calculation data range is 'As of Date to Maturity Date'.</p>
Market Valuation	<p>Select the measures you want to calculate:</p> <p>Market Value: Select this to calculate Present Value of principal and interest cash flows.</p> <p>Duration: Select this to calculate Macaulay Duration of cash flows</p> <p>YTM, Modified Duration, DV01, Convexity: Select this option if you want to measure the price sensitivity for small changes in the underlying interest rate curves (DV01/PV01).</p> <p>EIR: Select this option to calculate Effective Interest Rate of instrument</p>
Discount Method	<p>Select the Folder and Discount Method you want to be applied to the process. See Discount Method to set up Discount Methods. This is an optional step.</p>

Table 2-5 (Cont.) List of Calculation Elements details used for Creating Cash Flow Process

Parameter	Description
Holiday Calendar	Select checkbox to apply Holiday Calendar during cash flow calculation. If selected cash flow dates falling on a holiday get adjusted as per defined conventions. You can also select the holiday calculation option, calendar, and business day convention at the product-currency level.
Amortization of Premiums and Discounts	<p>Determines the method used for amortizing the premiums and discounts. This has the following options:</p> <ul style="list-style-type: none"> • Do not Calculate: The default value for the Calculation Method drop-down list is Do not calculate. In this case, cash flow for premium/discount does not get calculated even when Deferred Balance is given with instrument data. • Amortize on Payment Dates: Select this option if you want to calculate premiums and discounts on Payment Dates. • Amortize on User Defined Dates: Select this option if you want to calculate premiums and discounts on user-defined dates instead of payment dates. After selecting this option, perform these steps: <ul style="list-style-type: none"> a. Click Add next to Selected Dates field. b. Add one or more dates on which you want to amortize premium/discount using Calendar and click Add to Selection.

- Click **Apply** to navigate to the **Product Characteristics** section.

Figure 2-5 Product Characteristics

As Of Date (09-Oct-2015) Cash Flow Process Cancel Apply

Process Details Source Data Calculation Elements Product Characteristics Output Preferences Freeze Process

Lets select other characteristics you want to apply to portfolio.
You can choose product and currency and apply different characteristics.

Folder: CFESEG Product Hierarchy: Dim_product_hier

Add Delete

Product	Currency	Include	Interest	Model	Holiday	Holiday	Holiday
		Accrued	Interest	With	Calculation	Holiday	Rolling
		Interest?	Credited	Gros...	Option	Calendar	Convention

- Enter the Product Characteristics shown in the following table:

Table 2-6 List of Product Characteristics details used for Creating Cash Flow Process

Parameter	Description
Product Hierarchy Folder	You can specify some processing parameters at product-currency combination. Select the Folder from the Product Hierarchy Folder list.
Product Hierarchy	Select the Product Hierarchy on which you want to specify parameters. To add a Product Hierarchy, follow these steps: <ul style="list-style-type: none"> a. Click Add button next to the Product Hierarchy field. b. Select one or more products using the corresponding check-box and click Done.

10. After clicking Add, the list of product is displayed with the following details:

Table 2-7 Product Selection Details

Parameter	Description
Product	Shows the selected product details.
Currency	Shows the currency of the selected product.
Include Accrued Interest	Yes or No status of Include Accrued Interest. The basis on which the interest accrual on an account is calculated.
Interest Credited	Yes or No status of Interest Credited. This option shows the interest payments to be capitalized as principal on simple or non-amortizing instruments.
Model With Gross Rates	If the institution has outsourced loan serving rights for some of the assets (most typically mortgages), the rates paid by customers on those assets (gross rates) are greater than the rates received by the bank (net rates). For these instruments, both a net and gross rate is calculated within the cash flow engine and both gross and net rate financial elements are the output. The gross rate is used for prepayment and amortization calculations. The net rate is used for income simulation and the calculation of retained earnings in the auto-balancing process.
Holiday Calculation option	Shows the list of calculation options Shift dates Only and Recalculate Payment.
Holiday Calendar	Shows the list of holiday calendar. You can select one.

Table 2-7 (Cont.) Product Selection Details

Parameter	Description
Holiday Rolling Convention	<p>The default value is Unadjusted and is enabled, only when Holiday Calendar is selected. This can have the following values:</p> <ul style="list-style-type: none"> • Actual/Un-adjusted: Payment on an actual day, even if it is a non-business day. • Following Business Day: The payment date is rolled to the next business day. • Modified following business day*: The payment date is rolled to the next business day unless doing so would cause the payment to be in the next calendar month, in which case the payment date is rolled to the previous business day. • Previous business day: The payment date is rolled to the previous business day. • Modified previous business day*: The payment date is rolled to the previous business day unless doing so would cause the payment to be in the previous calendar month, in which case the payment date is rolled to the next business day. <p>Many institutions have month-end accounting procedures to use this.</p>

11. Click **Apply** to navigate to the **Output Preferences** section.

Figure 2-6 Output Preferences

As Of Date (09-Oct-2015) Cash Flow Process Cancel Apply ?

Process Details Source Data Calculation Elements Product Characteristics Output Preferences Freeze Process

Forecasted Interest Rates

RT-IRC-101 x

Forecasted Economic Indicators

Economic x

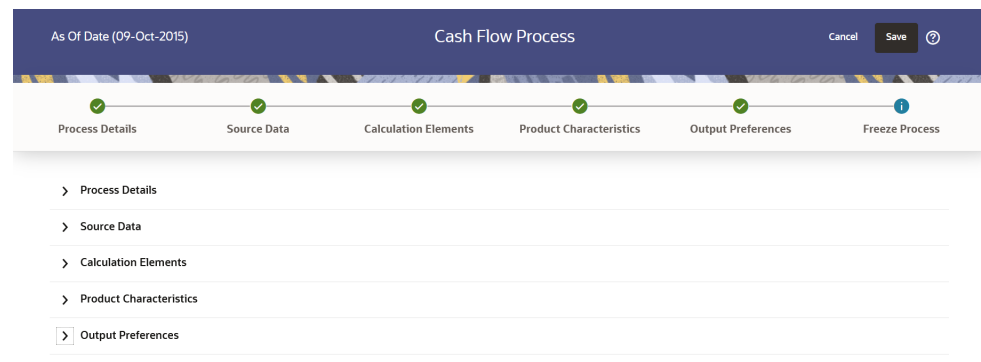
Select Economic Indicators

12. Enter the Output Preferences details shown in the following table

Table 2-8 List of Output Preferences details used for Creating Cash Flow Process

Parameter	Description
Forecast Interest Rates	Select the Interest Rate Curves for which you want the engine to write forecasted interest rates in the database table
Forecast Economic Indicators	Select the Economic Indicators for which you want the engine to write forecasted interest rates in the database table

13. Click **Apply** to navigate to the **Freeze Process** section.

Figure 2-7 Freeze Process

14. Verify the changes and click **Save**.

2.4 Executing Cash Flow Process

You can execute Cash Flow process using following methods:

- [Cash Flow Process UI](#)
- [Scheduler Service](#)

2.4.1 Using Cash Flow Process UI

To execute the cash flow process, follow these steps:

- Navigate to the **Cash Flow Process Summary** page.
- Search for a Cash Flow Process .
- Click on the **Action** icon against the Cash Flow Process Name and select **Execute** to execute an existing Cash Flow Process . The Run Parameter Execution window is displayed.
- Select the **As of Date (Execution Date)** and **Legal Entity**, and then click **Run**.
- The **Cash Flow Process Run Confirmation** page is displayed. The status of the process is displayed in the **Status** column. After completion of the process, you can navigate to the Execution Details page by selecting the **Execution Details** option under the Action column.

**Note:**

You can view the results of running a Cash Flow Process before the system updates the underlying records in the Instrument tables, provided you selected Preview Mode while defining it. If the runs in Preview Mode, query the FSI_CFE_MESSAGES_MLS table for any generated errors.

2.4.2 Using Scheduler Service

To execute the cash flow process, follow these steps:

1. Navigate to **Operations and Processes** menu, and select **Scheduler**.
2. Define a new batch.
3. Enter the **Batch Name** and **Description**, and then Save the batch.
4. To add a task, navigate to **Define Task**.
5. Select the Batch from Batch drop-down list on Define Task window.
6. Click the **Add** button.
7. Define the Task Code, Task Name, and Description.
8. Select Components as "Cash Flow Process".
9. Input the following mandatory parameters:
 - Process Name
 - Legal Entity Hierarchy
 - Legal Entity
10. Save and Execute the batch with Batch ID and MIS Date.

For more information, see the [Scheduler Service](#).

2.5 View Cash Flow Process Log

To view the execution details of the Cash Flow Process, follow these steps:

1. Navigate to the **Cash Flow Process Summary** page.
2. Search for a Cash Flow Process .
3. Click on the **Action** icon against the Cash Flow Process Name and select **Execution Details** . The **Execution Details** window is displayed.
4. Click any **Execution ID** to view the log details. The **Log Viewer** window shows the complete details of process along with Batch Run ID information.
5. Click **Export** to download the cash flow output details in csv format. This will fetch the Cash Flow Process Output from the `fsi_o_cfe_output_hist` table and store it in Object Store. Navigate to Data Management Tools > Data File Administration > File Upload and Download UI to download the csv file(s). More than one file can get created if volume is high. Number of records in each file depends on the value set for property Export File Row Count in Maintenance > Preferences.

2.5.1 Cash Flow Process Errors



Note:

- Error: Engine does not process, however sometimes default value can get used for calculations.
- Warning: Engine may use the default value or given wrong data for calculation, results may be incorrect.
- Info: Does not impact any processing but results may not be as expected.

The following table stores the processing error messages generated by the engine:

Table 2-9 List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
300	Functionality Not Implemented	Error
301	Invalid Data	Error
302	Principal Cash Flow Not Handled for this Amortization Type	Warning
303	Invalid record: Account Number is mandatory	Error
304	Invalid value for Adjustable Type, Fixed Rate used	Warning
305	Invalid value for amortization term, Number of months between Origination and maturity date used	Warning
306	Invalid value for amortization term multiplier, Months (M) used	Warning
307	Invalid value for Instrument Type; Loan Contracts (180) used	Warning
308	Invalid value for original term; Number of months between Origination and maturity date used	Warning
309	Invalid value for original term multiplier; Months (M) used	Warning
310	Missing or invalid data version number. Default value 1 used	Warning
311	Invalid value for Model with Gross Rates, account processed with net interest rate	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
312	Invalid value for Interest Capitalization Indicator, account processed without interest capitalization	Warning
313	Invalid value for Include Accrued Interest in cash flow, account processed without using given accrued interest. Accrued Interest > 0 but not used	Warning
314	Invalid value for Amortization Type; processed as simple interest or non-amortizing	Warning
315	Invalid record: End of Period Principal Balance (CUR_PAR_BAL) is zero or missing; Account not processed	Error
316	Invalid record: Accrued Interest Net <> 0 and (Last_payment_date < As_of_date) for Behavior pattern record. Accrued interest may be overstated	Warning
317	Original Principal Balance is zero/negative or missing; End of Period Principal Balance (CUR_PAR_BAL) used	Warning
318	Invalid record: Behavior Type Code is mandatory	Warning
319	Invalid record: Calculation date range is mandatory	Error
320	Invalid record: As of Date is mandatory	Warning
321	Invalid record: Origination date is mandatory	Error
322	Invalid record: Maturity date is mandatory; Account not processed;	Warning
323	Issue date cannot be greater than As-of-date; As-of-date used	Error
324	Issue date can not be greater than origination date; Origination date used	Error
325	Issue date not given; Origination date used	Warning
326	Remaining Number of Payments is 1 but Next Payment Date and Maturity Date are different. Payment processed on Maturity Date	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
327	Invalid value for accrual basis; Processed using 30/360	Warning
328	Invalid value of net interest rate; Processed using 0% interest rate	Warning
329	Invalid value for compounding basis; Processed as simple interest	Warning
330	Model with Gross Rates Indicator is GROSS but gross interest rate is not given; Processed using net interest rate	Warning
331	Current Payment cannot be less than 0; 0 used;	Warning
332	Invalid Last Interest Payment date; "Next Interest Payment Date minus Interest payment frequency" used.	Warning
333	Invalid next interest payment date; "Origination date + 1" or "As-of-date + 1" used.	Warning
334	Invalid original interest payment date; "Origination date + Interest Payment frequency" used.	Warning
335	Invalid value for interest payment frequency; Number of months between Origination and maturity date used;	Warning
336	Invalid value for interest payment frequency multiplier; Months (M) used;	Warning
337	Invalid value for Remaining Number of Payments; Default value 1 used;	Warning
338	Invalid Last Interest Payment date; "Origination Date" used.	Warning
339	Invalid Last Principal Payment date; "Next Principal Payment Date minus Principal payment frequency" used	Warning
340	Invalid Last Principal Payment date; "Origination Date" used.	Warning
341	Invalid Last Principal Payment date; Last Interest Payment Date used for conventional amortization types	Warning
342	Invalid next principal payment date; "Origination date + 1" or "As-of-date + 1" used	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
343	Invalid Next Principal Payment date; Next Interest Payment Date used for conventional amortization types	Warning
344	Invalid original principal payment date; "Origination date + Interest Payment frequency" used.	Warning
345	Invalid Original Principal Payment date; Original Interest Payment Date used for conventional amortization types	Warning
346	Invalid value for principal payment frequency; Number of months between Origination and maturity date used;	Warning
347	Invalid value for principal payment frequency; Interest Payment Frequency used for conventional amortization types	Warning
348	Invalid value for interest payment frequency multiplier; Months (M) used;	Warning
349	Invalid value for interest payment frequency multiplier; Interest Payment Frequency Multiplier used for conventional amortization types	Warning
350	Invalid Account Type, Account type defaults to Earning Assets.	Warning
351	Invalid record: Payment type and/or amount is mandatory	Warning
352	Invalid record: Payment Date is mandatory	Warning
353	Invalid record: Payment type is Principal and Interest but Total Amount (TOT_AMOUNT) is missing	Error
354	Invalid record: Payment type is Principal Only but Principal Payment Amount (PRIN_AMOUNT) is missing	Error
355	Invalid record: Payment type is Interest Only but Interest Payment Amount (INT_AMOUNT) is missing.	Error

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
356	Invalid payment pattern: Payment Pattern Sub Type is not given	Error
357	Invalid payment pattern: Payment Pattern Payment Type is not given	Error
358	Invalid payment pattern: Payment event id is not given	Error
359	Invalid payment pattern: Pattern type or sub type is Relative but frequency multiplier is not given	Error
360	Invalid payment pattern: Pattern type is Absolute but event month is not given	Warning
361	Invalid payment pattern: Pattern payment method is not given	Error
362	Invalid payment pattern: Payment Pattern Type is not given	Error
363	Invalid payment type code in payment pattern: Payment Type 300 (interest only) used;	Error
364	Invalid payment pattern: Pattern type or sub type is Relative but frequency is not given	Error
365	Invalid payment pattern: Pattern type is Absolute but event day is not given	Error
366	Invalid payment pattern: Pattern type is Split but split id is not given	Warning
367	Invalid payment pattern: Pattern type is Split but percentage of split is not given	Error
368	Invalid payment pattern: Pattern type or sub type is Relative but payment event repeat is not given	Error
369	Invalid payment pattern: Pattern Events not given	Error
370	Invalid value for holiday calculation option; processed as Shift Dates.	Error
371	Holiday Calculation Option can only be Recalculate when accrual basis is B/252	Error

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
372	Invalid value for holiday calendar code; Holiday adjustment not applied or details from process level parameters used;	Error
373	Holiday Calendar Code is mandatory when accrual basis is B/252. Holiday details from process level parameters or A/A used.	Warning
374	Invalid value for holiday rolling convention; Holiday adjustment not applied;	Warning
375	Holiday Rolling Convention Code is mandatory when accrual basis is B/252. Following business day used.	Warning
376	Reprice frequency is > 0 and calculation date range is last reprice to next reprice date but balance on last reprice date is not available; Processed using End of Period Principal Balance;	Warning
377	Invalid value for margin type code; Default value RATE (0) used;	Warning
378	Invalid value for net margin code; Default value NRSG (0) used;	Warning
379	Invalid value for next reprice date; Default value Origination date + 1 or As-of-date + 1 used;	Warning
380	Invalid value for last reprice date; Default value Next Reprice Date minus Reprice Frequency used;	Warning
381	Warning: Negative Amortization Equalization Frequency cannot be negative; 0 used.	Warning
382	Warning: Invalid Negative Amortization Equalization Frequency Multiplier; Months used.	Warning
383	Warning: Negative Amortization Payment Change Frequency cannot be negative; 0 used.	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
384	Warning: Invalid Negative Amortization Payment Change Frequency Multiplier; Months used.	Warning
385	Warning: Negative Amortization Limit value does not fall in a valid range 0-200; 0 used.	Warning
386	Warning: Negative Amortization Equalization date is less than origination date (future origination) or less than the as-of-date (past origination); Next Reprice Date used.	Warning
387	Warning: Negative Amortization Equalization date is less than origination date (future origination) or less than the as-of-date (past origination); Next Reprice Date used.	Warning
388	Warning: Negative Amortization Payment Adjustment date is less than origination date (future origination) or less than the as-of-date (past origination); Next Reprice Date used.	Warning
389	Warning: Negative Amortization Payment Adjustment date is less than origination date (future origination) or less than the as-of-date (past origination); Next Reprice Date used.	Warning
390	Warning: Negative Amortization payment change limit cannot be negative; Limit not applied.	Warning
391	Maturity date of account is different from highest payment date in schedule; Dates from schedule used;	Warning
392	Remaining Number of Payments given with account is different from count of payment dates after as of date in schedule; Dates from schedule used;	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
393	Invalid value for next reprice date for a teaser instrument; Value derived by rolling forward Teaser End Date with Repricing Frequency;	Warning
394	Invalid record: Maturity date is prior to As of date; Account not processed;	Warning
395	Invalid record: Maturity date is prior to Origination date; Account not processed;	Warning
396	Invalid record: Payment dates in schedule are prior to As of date; Account not processed;	Warning
397	Principal balance is not zero but maturity date is prior to as of date; Maturity date defaulted to As of date + 1	Warning
398	Principal balance is not zero but maturity date is prior to origination date; Maturity date defaulted to As of date + 1	Warning
399	Next reprice date is after maturity date; Defaulted to maturity date;	Warning
400	Invalid value for last reprice date; Default value Origination Date used;	Warning
401	Invalid value for Adjustable Type; Calculation date range is AOD to NRD or LRD to NRD but adjustable Type of account is Fixed. Account not processed.	Warning
402	Adjustable Type of account is Floating or Other Adjustable but repricing frequency multiplier is not given or is not valid; Months (M) used;	Warning
403	Adjustable Type of account is Floating or Other Adjustable but Interest Rate Code is not given or is not valid; Processed with Interest Rate Code 0.	Warning
404	Adjustable Type of account is Floating or Other Adjustable but repricing frequency is not given or is not valid; Processed with fixed interest rate.	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
405	Adjustable Type of account is repricing pattern but repricing pattern code is not given or is not valid; Processed with fixed interest rate.	Warning
406	Interest timing type not given; Interest In Arrears used;	Warning
407	Interest timing type cannot be advance when amortization is conventional type; Interest In Arrears used;	Warning
408	Amortization Type of account is payment pattern but pattern code is not given or is not valid; Processed as non-amortizing instrument.	Warning
409	Accrual basis is B/252 but holiday adjustment is not enabled. A/A used.	Warning
410	Amortization Type of account is payment schedule but schedule data is not given; Processed as non-amortizing account.	Warning
411	Invalid value for next reprice date for a teaser instrument; Value derived by rolling forward Teaser End Date with Repricing Frequency;	Warning
412	Invalid value for last reprice date for a teaser instrument; Value derived by rolling forward Teaser End Date with Repricing Frequency;	Warning
413	Teaser End Date is after Maturity Date; Value defaulted to Maturity Date;	Warning
414	Teaser End Date is before Origination Date; Value defaulted to Origination Date;	Warning
415	Invalid Mortgage Offset Account Expected Balance as Expected Balance (MOA_EXPECTED_BAL) is empty or <= 0, Processed as normal instrument.	Warning
416	Invalid Mortgage Offset Account Expected Balance Growth Percentage (MOA_EXPECTED_BAL_GR OWTH_PCT), Processed with default value of 0.	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
417	Invalid Mortgage Offset Account Expected Balance on last reprice date (MOA_LRD_OFFSET_BAL), Processed using default value as MOA_EXPECTED_BAL	Warning
418	Invalid Mortgage Offset Account Minimum Balance (MOA_MIN_BAL), Processed with default value of 0.	Warning
419	Invalid Mortgage Offset Percent (MOA_OFFSET_PERCENT), Processed with default value of 100	Warning
420	Invalid Mortgage Offset Account Original Expected Balance (MOA_ORG_OFFSET_BAL), but since calculation date range is Origination to Maturity, Processed as normal instrument.	Warning
421	Invalid Mortgage Offset Account Original Expected Balance (MOA_ORG_OFFSET_BAL). but since calculation date range is other than Origination to Maturity, Process account with considering the mortgage offset account as Original Expected Balance doesnt impact on MOA calculations.	Warning
422	One or more required inputs are missing for factors calculation using arc tangent method	Warning
423	Cannot generate prepayment factors dates if PaymentDates are not provided	Warning
424	Cannot generate early redemption dates if PaymentDates are not provided	Warning
425	user tenor rules are not defined in prepayment meta data	Warning
426	conditions are not satisfied to apply early redemption on user defined tenors	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
427	Cannot generate prepayment factors dates if PaymentDates are not provided;	Warning
428	Behavior pattern is not applicable when calculation data range is Origination to Maturity. Generated cash flows from As of date to maturity	Warning
429	Behavior pattern is not applicable when calculation data range is Last Reprice to Next Reprice Date. Generated cash flows from As of date to Next Reprice Date	Warning
430	Maturity Date < Max Date of Pattern, Maturity Date set to Max Tenor of behavior pattern	Warning
431	Invalid value for Behavior Sub Type of account having devolvement & recovery or non-performing behavior type; Account not processed;	Error
432	Invalid value for devolvement status of account; Account not processed;	Error
433	Devolvement amount cannot be negative when devolvement status of account is devolved; Default value of 0 used;	Error
434	Invalid value for Behavior Type of account; Processed using behavior type from pattern definition.	Warning
435	Invalid behavior pattern: Behavior Type is not given or is incorrect; Behavior pattern not used; Processed as non-amortizing instrument;	Warning
436	Invalid behavior pattern: Behavior Sub Type is not given or is incorrect; Behavior pattern not used; Processed as non-amortizing instrument;	Warning
437	Invalid behavior pattern: Tenor multiplier is not given; Processed as non-amortizing instrument;	Error
438	Invalid behavior pattern: Tenor is not given; Processed as non-amortizing instrument;	Error

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
439	Invalid behavior pattern: Percentage is not given; Processed as non-amortizing instrument;	Error
440	Invalid behavior pattern: Sequence is not given; Processed as non-amortizing instrument;	Error
441	Behavior Type definition is inconsistent between the Behavior Pattern and BEHAVIOR_TYPE_CD of account. Defaulted to the Behavior Type specified in the Behavior Pattern.	Warning
442	Interest in advance is not supported for behavior patterns, defaulting to Interest in Arrears	Warning
443	No prepayment parameter is found for payment date	Warning
444	Cannot generate early redemption prepayment rates if payment dates are not provided or calculation method is not Constant	Warning
445	Invalid value for Exchange of Principal flag for Off-balance sheet product; Processed with No Exchange of Principal	Warning
446	Invalid value for Exchange of Principal flag for Off-balance sheet product; Processed with Leg Type 0	Warning
447	Invalid value for Minimum Balance for Amortizing Swap; Processed with value 0	Warning
448	Invalid value for purchase sale logic of Off-balance sheet product; Processed as sold contract (1)	Warning
449	Invalid value for swap classification code; Processed as generic swap (0)	Warning
450	Invalid Last Reprice Date for Forward Rate Agreement; Processed using Origination Date	Warning
451	Invalid Repricing Frequency Multiplier for Forward Rate Agreement; Processed using Original Term Multiplier	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
452	Invalid Next Reprice Date for Forward Rate Agreement; Processed using Origination Date;	Warning
453	Invalid Repricing Frequency for Forward Rate Agreement; Processed using Original Term;	Warning
454	Invalid Exchange of Principal flag for Forward Rate Agreement; Processed using No Exchange of Principal	Warning
455	Invalid Interest Timing Type for Forward Rate Agreement; Processed as Interest in advance	Warning
456	Invalid Adjustable Type for Forward Rate Agreement; Processed as Other Adjustable (250);	Warning
457	Invalid Origination Date for Forward Rate Agreement; Processed with value As of Date + 1;	Warning
458	Invalid Maturity Date for Forward Rate Agreement; Processed using Origination Date + Original Term;	Warning
459	Invalid Remaining Number of Payments for Forward Rate Agreement; Processed using 1	Warning
460	Invalid Next Interest Payment Date for Forward Rate Agreement; Processed using Origination Date	Warning
461	Invalid Next Principal Payment Date for Forward Rate Agreement; Processed using Origination Date	Warning
462	Invalid Original Interest Payment Date for Forward Rate Agreement; Processed using Origination Date	Warning
463	Invalid Original Principal Payment Date for Forward Rate Agreement; Processed using Origination Date	Warning
464	Invalid Last Interest Payment Date for Forward Rate Agreement; Processed using Origination Date;	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
465	Invalid Interest Payment Frequency for Forward Rate Agreement; Processed using Original Term	Warning
466	Invalid Interest Payment Frequency Multiplier for Forward Rate Agreement; Processed using Original Term Multiplier	Warning
467	Invalid Principal Payment Frequency for Forward Rate Agreement; Processed using Original Term	Warning
468	Invalid Principal Payment Frequency Multiplier for Forward Rate Agreement; Processed using Original Term Multiplier	Warning
469	Invalid Amortization Type for Forward Rate Agreement; Processed as non-amortizing (700) instrument;	Warning
470	Invalid value for Exchange of Principal flag for Foreign Exchange instrument; Processed with Exchange of Principal;	Warning
471	Invalid Amortization Type for Foreign Exchange instrument; Processed as non-amortizing (700) instrument;	Warning
472	Invalid Adjustable Type for Foreign Exchange instrument; Processed as Fixed;	Warning
473	Invalid Interest Timing Type for Foreign Exchange instrument; Processed as Interest in arrears;	Warning
474	Invalid current gross interest rate for Foreign Exchange instrument; Processed with no interest;	Warning
475	Invalid current net interest rate for Foreign Exchange instrument; Processed with no interest;	Warning
476	Invalid remaining number of payments for Foreign Exchange Contract; Processed with 1 remaining payment;	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
477	Invalid Next Interest Payment Date for Foreign exchange contract; Processed using Maturity Date;	Warning
478	Invalid Next Principal Payment Date for Foreign exchange contract; Processed using Maturity Date;	Warning
479	Invalid Original Interest Payment Date for Foreign exchange contract; Processed using Maturity Date;	Warning
480	Invalid Original Principal Payment Date for Foreign exchange contract; Processed using Maturity Date;	Warning
481	Invalid Next Reprice Date for Foreign exchange contract; Processed using Maturity Date;	Warning
482	Invalid Repricing Frequency for Foreign Exchange Contract; Processed using Original Term;	Warning
483	Invalid Repricing Frequency Multiplier for Foreign Exchange Contract; Processed using Original Term Multiplier;	Warning
484	Invalid Interest Payment Frequency for Foreign Exchange Contract; Processed using Original Term;	Warning
485	Invalid Interest Payment Frequency Multiplier for Foreign Exchange Contract; Processed using Original Term Multiplier;	Warning
486	Invalid Principal Payment Frequency for Foreign Exchange Contract; Processed using Original Term;	Warning
487	Invalid Principal Payment Frequency Multiplier for Foreign Exchange Contract; Processed using Original Term Multiplier;	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
488	Invalid Last Interest Payment Date for Foreign Exchange Contract; Processed using Origination Date;	Warning
489	Invalid Last Reprice Date for Foreign Exchange Contract; Processed using Origination Date;	Warning
490	Invalid End of Period Principal Balance for Foreign Exchange Swap; Processed using no balance;	Warning
491	Invalid Original Principal Balance for Foreign Exchange Swap; Processed using no balance;	Warning
492	Invalid value for next reprice date for a teaser instrument; Defaulted to Teaser End Date;	Warning
493	Repricing pattern can not be used for teaser instrument;	Warning
494	Interest timing type cannot be advance when conventional payment pattern is used, Interest In Arrears used as default;	Warning
495	Interest timing type cannot be advance when Account Type is Other Asset or Other Liabilities or Non-Interest Income or Non-Interest Expense or Interest Income or Interest Expense, Interest In Arrears used as default;	Warning
496	Last interest payment date cannot be before Origination Date; Default value Origination Date used;	Warning
497	Last principal payment date cannot be before Origination Date; Default value Origination Date used;	Warning
498	Invalid amortization type for Other Asset-Liability; Processed as Non-amortizing instrument;	Warning
499	Invalid current net interest rate for Other Asset-Liability; Processed without interest and default as 0;	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
500	Invalid current gross interest rate for Other Asset-Liability; Processed without interest and default as 0;	Warning
501	Invalid adjustable type for Other Asset-Liability; Processed as fixed rate;	Warning
502	Interest timing type cannot be advance when adjustable type is floating rate, Interest In Arrears used as default;	Warning
503	Repricing pattern code is empty;	Warning
504	Adjustable Type of account is Repricing Pattern but Repricing Pattern definition not given. Processed as Other Adjustable (250);	Warning
505	Repricing Pattern Type Code is invalid in repricing pattern definition. Account not processed;	Error
506	Repricing Pattern Events UDS is empty	Error
507	Event Sequence number is invalid in repricing pattern definition. Account not processed;	Error
508	Repricing Method Code is invalid in repricing pattern definition. Account not processed;	Error
509	Balance Tier Type Code is invalid in repricing pattern definition. Account not processed;	Error
510	Event Day is invalid in absolute repricing pattern definition. Account not processed;	Error
511	Event Month is invalid in absolute repricing pattern definition. Account not processed;	Error
512	Repricing Pattern EventsDetail UDS is empty	Error
513	Event Detail Sequence number is invalid in repricing pattern definition. Account not processed;	Error

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
514	Repricing method is Indexed but Interest Rate Code is not given in repricing pattern definition. Account not processed;	Warning
515	Event Frequency is invalid in relative repricing pattern definition. Value assumed to be 1 Month;	Warning
516	Event Frequency Multiplier is invalid in relative repricing pattern definition. Value assumed to be 1 Month;	Warning
517	Event Repeat Times is invalid in relative repricing pattern definition. Value assumed to be 1;	Warning
518	Adjustable type code of account is 300 but corresponding data of balance tiers and rate is not available; Processed with fixed interest rate;	Warning
519	Invalid amortization type for an account with Balance Tier Interest Rate; Processed as non-amortization instrument;	Warning
520	Adjustable type of tier cannot be Floating Rate if Interest Timing Type of account is Advance; Processed as Interest in Arrears;	Warning
521	Adjustable type code of account is 300 but corresponding adjustable type of balance tiers is invalid; Processed tier with fixed interest rate;	Warning
522	Adjustable type code of balance tier is 250 but next reprice date, last reprice date or reprice frequency are missing; Processed tier with fixed interest rate;	Warning
523	Sum of current balances of all tiers of account is different from current par balance of account;	Warning
524	Current balance of tiers of account is not given; Account not processed;	Error

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
525	Sum of original par balances of all tiers of account is different from original par balance of account;	Warning
526	Original par balance of tier not given; End of Period Principal Balance used;	Warning
527	Invalid Contract Currency Pay for Foreign Exchange Swap;	Warning
528	Invalid Original Payment Amount Pay for Foreign Exchange Swap;	Warning
529	Invalid Contract Currency Receive for Foreign Exchange Swap;	Warning
530	Invalid Original Payment Amount Receive for Foreign Exchange Swap;	Warning
531	Invalid Exchange Rate Start for Foreign Exchange Swap;	Warning
532	Invalid Receive CCY for Foreign Exchange Swap;	Warning
533	Invalid Receive Leg Amount for Foreign Exchange Swap;	Warning
534	Invalid Pay CCY for Foreign Exchange Swap;	Warning
535	Invalid Pay Leg Amount for Foreign Exchange Swap;	Warning
536	Invalid Exchange Rate End for Foreign Exchange Swap;	Warning
537	Interest timing type cannot be advance when interest is capitalized; Interest In Arrears used;	Warning
538	Amortization type of Interest Rate Option can only be Non amortizing (700) or Level principal (820); Processed as Non amortizing instrument;	Warning
539	Binary Rate of Interest Rate Option cannot be less than zero; Processed without binary rate;	Warning
540	Invalid Interest Calculation Type for Interest Rate Option; Processed with default calculation type;	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
541	Functionality not implemented for Interest Calculation Types Numeric Average, Geometric Average, Range Calculation and Binary Range; Processed with default calculation type;	Warning
542	Adjustable Type of Interest Rate Option can only be Other Adjustable (250);	Warning
543	Next Reprice Date of Interest Rate Option must be same as Next Interest Payment Date;	Warning
544	Last Reprice Date of Interest Rate Option must be same as Last Interest Payment Date;	Warning
545	Reprice frequency of Interest Rate Option must be same as Interest Payment Frequency;	Warning
546	Reprice Frequency Multiplier of Interest Rate Option must be same as Interest Payment Frequency Multiplier;	Warning
547	Adjustable type code for of 78s instrument can only be fixed rate;	Warning
548	Interest Timing Type of of 78s instrument can only Interest in Arrears;	Warning
549	Interest payment frequency of of 78s instrument must be 1 month;	Warning
550	Interest payment frequency multiplier of of 78s instrument must be in Months;	Warning
551	Principal payment frequency of of 78s instrument must be 1 month;	Warning
552	Principal payment frequency multiplier of of 78s instrument must be in Months;	Warning
553	Last Interest and Principal payment date of of 78s instrument must be same; Set Last Principal Payment Date = Last Interest Payment Date	Warning
554	Next Interest and Principal payment date of of 78s instrument must be same; Set Next Principal Payment Date = Next Interest Payment Date	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
555	Original Interest and Principal payment date of of 78s instrument must be same; Set Original Principal Payment Date = Original Interest Payment Date	Warning
556	Original Principal Balance of of 78s instrument must be higher than End of Period Principal Balance;	Warning
557	Original Term Multiplier of of 78s instrument must be in months;	Warning
558	Original Term of of 78s instrument must be in months; Number of months between Origination and maturity date used;	Warning
559	Current Payment Amount of of 78s instrument must not be zero;	Warning
560	Original Payment Amount of of 78s instrument must not be zero;	Warning
561	Remaining Number of Payments is different from number of months between Last Interest Payment Date and Maturity Date; Cash flows may have error;	Warning
562	Interest timing type can be Set in Arrears only when calculation date range is As of date to Maturity; Interest In Arrears used;	Warning
563	Amortization type of instrument can only be Simple Interest when embedded option is applied; Processed as non-amortizing instrument with embedded option;	Warning
564	Invalid Option Exercise Type; Processed as instrument without embedded option;	Warning
565	Option start date is required for American options, As of date used;	Warning
566	Invalid Option Type; Processed as instrument without embedded option;	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
567	Invalid Option Strike Type Code; Processed as instrument without embedded option;	Warning
568	Invalid Option Rate Lookup Code, Remaining Term used;	Warning
569	Rate lookup code for fixed rate instrument cannot be repriced frequency, Remaining Term used;	Warning
570	Invalid Option Strike Interest Rate Code; Processed as instrument without embedded option;	Warning
571	Option expiry date must be between As-of-date and Maturity date, Processed using Maturity Date as Expiry Date;	Warning
572	Option Strike Value not given for embedded option, Strike price 100 used;	Warning
573	Option Strike Value not given for embedded option, Strike rate set same as current net interest rate;	Warning
574	Embedded options schedule not given for Bermudan option, Processed as instrument without embedded option;	Warning
575	Option expiry date not given for Bermudan option in schedule; Processed as instrument without embedded option;	Warning
576	Option expiry date must not be after Maturity date, Processed using Maturity Date as Expiry Date;	Warning
577	Option Strike Value not given for embedded option, Strike price 100 used;	Warning
578	Option Strike Value not given for embedded option, Strike rate set same as current net interest rate;	Warning
579	Either Embedded Option Flag is Not Y or Invalid Option decision type, where instrument is Earning Asset or Interest Bearing Liabilities;	Warning

Table 2-9 (Cont.) List of Error Codes for Cash Flow Process

Error Code	Error Type	Error Message
580	Invalid Index Adjustment Type. Processed without inflation-adjustment;	Warning
581	Account Index History not been given for inflation adjusted instrument. Processed without inflation-adjustment;	Error
582	Base Index Value not been given for inflation adjusted instrument. Processed without inflation-adjustment;	Error
583	Invalid Capital Protection Category for inflation indexed instrument. Processed with floor of 1;	Warning
584	Capital Protection Category for inflation indexed instrument is Max during life but Max Index Value is invalid; Processed with Capital Protection Category as Floor or 1;	Warning
585	Invalid Option decision type, where Embedded Option Flag is enabled, Processed as instrument without embedded option;	Warning
586	Invalid Account Type, for embedded option, Processed as instrument without embedded option	Warning
587	Invalid DiscountMethod Sys Id, for embedded option, Processed as instrument without embedded option;	Warning
588	Invalid value for Amortization Method for Premiums and Discounts; Level Yield method used	Warning
589	Batch size is empty	Warning
590	Request ID is empty	Warning
591	Invalid Interest rate code	Warning